

The Rivah Digest

A quarterly newsletter of the Rappahannock Area Health District



2005 National Scout Jamboree

Over 40,000 kids from over 40 different countries will converge on Fort AP Hill in Caroline County from July 26-August 3, 2005. It's time for the 2005 National Boy Scouts Jamboree!

The Rappahannock Area Health District and the Virginia Department of Health have been actively preparing for this event. RAHD worked with the National Domestic Preparedness Consortium to offer a three-day course on Emergency Response to Domestic Biological Incidents. Two health department staff will be on call for service at the Caroline County Emergency Operations Center and RAHD is ready to activate its Emergency Communication Center if needed for a public health response. RAHD has assembled a 24-person Public Health Response Team for public health emergencies such as communicable disease outbreaks, bioterrorism events, or natural disasters. In addition, the health department has activated its auxiliary, the Medical Reserve Corps as a staffing resource during the Jamboree. Health Department staff will work closely with the US Public Health Service and Fort AP Hill's Environmental Health and Safety team on site during the Jamboree event.

Active surveillance during the Jamboree

In addition to the 40,000 scouts, 7,000 staff and volunteers and over 60,000 visitors will be in Caroline County for the 2005 Jamboree. There are three evening events in which over 100,000 people are expected to visit. The influx of people will significantly increase the population in Caroline County and the surrounding areas. The Rappahannock Area Health District is working with the community to conduct active surveillance for communicable diseases. The health department will be conducting electronic syndromic surveillance with Mary Washington Hospital and needs your help to report suspicious illnesses and communicable diseases such as possible foodborne outbreaks or clusters of individuals with the same symptoms.

To Report Suspicious or Unusual Illnesses during the Jamboree:



Leah Dewey, Epidemiologist @ 540-899-4797 x 103 or 540-850-1250
Joe Saitta, Bioterrorism Coordinator @ 540-899-4797 x 111 or 540-840-5942
Dr. Donald Stern, Health Director @ 540-899-4797 or 540-207-0595
Toll-free - 866-531-3068 or call your local health department.

Situations to Report:

Anything unusual or a higher than normal volume of any of the following:

- Unexplained fevers
- GI, Respiratory, Neurological
- Unexpected, severe illness
- Agents of Bioterrorism
- Suspected Foodborne Illness



July 2005

Health Departments

- **Rappahannock District Office**
540-899-4797
- **Caroline County**
804-633-5465
- **King George County**
540-775-3111
- **Fredericksburg**
540-899-4142
- **Spotsylvania County**
540-582-7155
- **Stafford County**
540-659-3101

After hours reporting:

- **Communicable Disease & Outbreak Reporting**
540-850-1250
- **Environmental Pager**
540-899-8601
- **Rabies Pager weekends only**
540-372-2562
- **New Toll-free number for public health and Bioterrorism events**
866-531-3068

Guidance for Clinicians on Diagnosis and Prevention of Lyme Disease

Organism	<i>Borrelia burgdorferi</i> , a spirochete bacterium
Vector	<ul style="list-style-type: none"> Black-legged ticks, <i>Ixodes scapularis</i>, in northeastern and northcentral US; western black-legged tick, <i>Ixodes pacificus</i>, on pacific coast. <i>Ixodes</i> ticks are much smaller than common dog and cattle ticks; in larval and nymphal stages.
Reservoir/Host	Primarily white-footed mice / white tailed deer. Also other small rodents and non-vertebrate animals.
Route of infection	<ul style="list-style-type: none"> Via the bite of an infected tick; usually occurs May to July. Tick must be attached for > 24 hours to transmit spirochete bacterium. Lyme disease spirochetes disseminate from the tick bite site by cutaneous, lymphatic and blood borne routes.
Incubation	7-14 days; range 3-30 days. Repeated infection has been documented.
Signs & Symptoms	<p><u>Early localized disease:</u></p> <ul style="list-style-type: none"> Erythema migrans (EM) accompanied by nonspecific symptoms such as fever, malaise, fatigue, headache, myalgia, and arthralgia. Rash occurs in 60-80% of patients. <p><u>Early disseminated disease: (days to weeks after infection)</u></p> <ul style="list-style-type: none"> Multiple erythema migrans resulting from spirochetemia; usually smaller than original lesion <i>Neurologic</i> = lymphocytic meningitis, cranial neuropathy (especially facial nerve palsy), and radiculoneuritis. <i>Musculoskeletal</i> = may include migratory joint and muscle pains with or w/o objective signs of joint swelling. <i>Cardiac</i> = myocarditis and transient atrioventricular blocks of varying degree occur rarely. <p><u>Late disseminated disease: (weeks to months after infection)</u></p> <ul style="list-style-type: none"> <i>Musculoskeletal</i> = recurrent, intermittent attacks of objective joint swelling in one or a few joints; usually large, weight-bearing joints such as the knee. <i>Neurological</i> = some patients develop chronic axonal polyneuropathy or encephalopathy, the latter usually manifested by cognitive disorders, sleep disturbance, fatigue, and personality changes.
Recommended Laboratory Testing	<p>Serological testing is only effective in disseminated disease. Antibodies may not be detectable in early localized disease. Serum samples from persons with disseminated or late-stage LD almost always have a strong IgG response to <i>Borrelia burgdorferi</i> antigens.</p> <ul style="list-style-type: none"> Serology: IgG and IgM enzyme immunoassay (EIA) or immunofluorescence antibody (IFA). If either is equivocal, then IgM and IgG Western blot should be performed. Criteria for Western blot positives = IgM (>= 2 of the 23-, 39- and 41-KDa bands); IgG (>=5 of the 18-, 21-, 28-, 30-, 39-, 41-, 45-, 58-, 66- and 91-kDa bands) PCR for <i>B. burgdorferi</i> is usually positive in joint fluid in Lyme acute arthritis. PCR on blood or urine is not recommended. Urine antigen test are not recommended.
Case Definition	<p><u>Clinical Case (for surveillance purposes only):</u></p> <ul style="list-style-type: none"> Erythema migrans at least 5 cm in size, OR At least one late manifestation of the nervous, musculoskeletal or cardiac system AND laboratory confirmation of infection. <p><u>Laboratory criteria for confirmation:</u></p> <ul style="list-style-type: none"> Isolation of <i>Borrelia burgdorferi</i> from clinical specimen, OR Demonstration of diagnostic levels of IgM and IgG antibodies to the spirochete in serum or CSF, OR A two-test approach using a sensitive EIA or IFA followed by Western blot is recommended.
Treatment Options	<ul style="list-style-type: none"> Early localized disease = Doxycycline 100mg BID or Amoxicillin 25-50mg/kg per day, orally, divided into 2 doses (max 2g/day) for 2 wks. Early disseminated and late disease = Ceftriaxone 75-100 mg/kg, IV or IM, once a day (max 2g/day) or penicillin, 300,000 U/kg per day, IV, given in divided doses Q4h (max 20 million U/day) for 3-4 wks. Allergic to penicillin or can not use tetracyclines – Cefuroxime or Erythromycin. Arthritis – 4 wks oral agent. Consult Infectious Disease.
Prevention	<ul style="list-style-type: none"> Tick habitat control = removing leaf litter, brush and wood piles around houses and at the edges of yards, clearing trees and brush to admit more sunlight and reduce habitat for deer, rodents, ticks. Personal protection = protective clothing, tick checks and proper removal of attached ticks. Insect repellent = 50% DEET for adults; 30% DEET for children.
Reporting	Report all suspected and confirmed cases to the local health department.

It's tick season.....Identify them. Eliminate them.

THE USUAL SUSPECTS:

Lyme Disease (see opposite page)

Rocky Mountain Spotted Fever (RMSF)

Agent: *Rickettsia rickettsii*

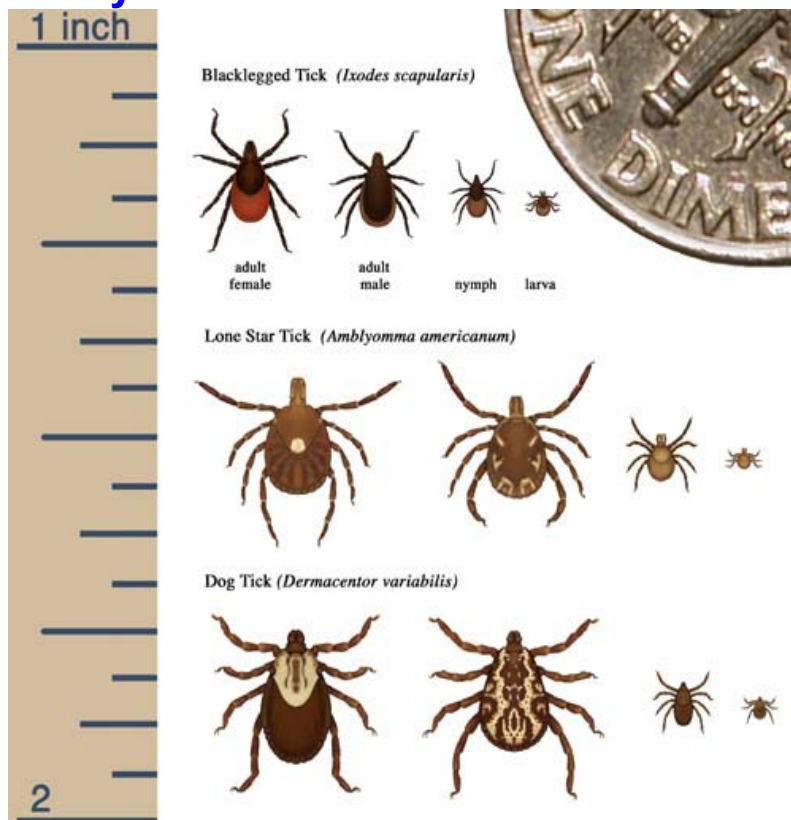
Vector: *Dermacentor variabilis*, dog tick

Incubation: 2-5 days. Only 6-10 hours of tick attachment required to transmit disease.

Initial sx: fever (100%), malaise, severe frontal headache, myalgia, vomiting. Macula rash may start on the wrists/ankles, can appear several days after onset of fever and can evolve to become petechial. Untreated RMSF can result in severe systemic manifestations, including pneumonia, myocarditis, hepatitis, acute renal failure, encephalitis, gangrene, and death. Age specific incidence highest in children aged 1-9. Case fatality 30% in untreated cases; 50% of RMSF deaths occur within 9 days of illness onset.

Laboratory Testing: 4 fold change in antibody titer to antigen *Rickettsia rickettsii* in 2 serum samples; immunostaining in skin biopsy, or isolation and culture of agent in clinical specimen.

Rx with Doxycycline.



Ehrlichiosis—Human Monocytic (HME) & Human Granulocytic (HE)

Agent: 3 species of *Ehrlichia* in US. *Ehrlichia chaffeensis* primarily occurs in southeastern and south central US. HGE agents: *Ehrlichia equi* and *Ehrlichia phagocytophila*.

Vector: *Amblyomma americanum*, the lone star tick. HGE is transmitted by the blacklegged tick (*Ixodes scapularis*) and the western blacklegged tick (*Ixodes pacificus*).

Incubation: 5-7 days

Initial Sx: fever, myalgia, headache, nausea; HME—rash (36%); leukopenia, thrombocytopenia & elevated LFTs. Most patients are middle-aged men presenting in spring and summer.

Laboratory Testing: 4 fold change in antibody titer to antigen from *Ehrlichia* in 2 serum samples by IFA, positive PCR, or immunostaining in skin biopsy, or isolation and culture of agent in clinical specimen.

Rx with Doxycycline.



Cut this out and provide it to your patients:

Follow these easy steps to protect against ticks:

- **Avoid tick-infested areas.** When hiking, stay in the center of the path to avoid ticks on brush.
- **Wear light-colored clothing.** Tuck your shirt into your pants and pants into your socks to keep ticks outside of your clothes.
- **Use chemical repellent with DEET or permethrin and wear protective clothing.** Repellents containing permethrin can be sprayed on boots and clothing, lasting several days. Use <50 percent DEET for adults, <30 percent for children.
- **Perform daily tick checks.** Conduct a body check upon return from potentially tick-infested areas by searching your entire body for ticks. Check under the arms, in and around the ears, inside belly button, back of the knees, in and around the hair, between the legs, and around the waist. Also tick-check your pets.
- **Tick-proof your yard.** Lay down wood chips or gravel where lawns butt up against wooded areas to create a barrier between the more heavily tick-infested vegetation areas and the grass. Visit CDC's tick page to learn more on tick-proofing your yard. www.cdc.gov/ncidod/ticktips2005

Proper tick removal:

Properly remove ticks with fine point tweezers and protect bare hands with a tissue or gloves to avoid contact with tick fluids. Grasp the tick close to the skin and gently pull the tick straight out. Do not twist or jerk the tick, as this may cause the mouthparts to break off and remain in the skin. Wash your hands and disinfect the bite area with an antiseptic.



Donald Stern, MD, MPH — Director of Public Health
 Leah H. Dewey, MPH — District Epidemiologist
 Joe Saitta, Ed.D — Emergency Planner
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Please visit us on the web @
rahd.vdh.virginia.gov

Selected Reportable Diseases in RAHD - January - June 2005 vs 2004[±]

DISEASE	2005		2004		Diff		% change		2004 State	
	(n)	rate [†]	(n)	rate [†]	(n)	(%)	(%)	(%)	(n)	rate [†]
AIDS	7	2.6	10	3.7	-3.0	-30.0%			362	5.0
Campylobacter	8	3.0	12	4.5	-4.0	-33.3%			239	3.3
Chickenpox	12	4.5	3	1.1	9.0	300.0%			-	-
Chlamydia Trachomatis	334	124.7	317	118.4	17.0	5.4%			10597	145.3
Enterohemorrhagic E.coli	2	0.7	1	0.4	1.0	100.0%			-	-
Giardiasis	7	2.6	8	3.0	-1.0	-12.5%			173	2.4
Gonorrhea	95	35.5	97	36.2	-2.0	-2.1%			4529	62.1
HIV Infection	4	1.5	12	4.5	-8.0	-66.7%			431	5.9
Haemophilus Influenza Infection	6	2.2	1	0.4	5.0	500.0%			-	-
Hepatitis A	0	0.0	2	0.7	-2.0	-100.0%			48	0.7
Hepatitis B (Acute)	3	1.1	3	1.1	0.0	0.0%			102	1.4
Hepatitis C (Acute)	4	1.5	0	0.0	4.0	-			-	-
Lyme Disease*	11	4.1	10	3.7	1.0	10.0%			-	-
Meningococcal Infection	3	1.1	0	0.0	3.0	-			9	0.1
Pertussis	12	4.5	1	0.4	11.0	1100.0%			71	1.0
Rocky Mountain Spotted Fever	3	1.1	2	0.7	1.0	50.0%			-	-
Salmonellosis	7	2.6	9	3.4	-2.0	-22.2%			325	4.5
Shigellosis	2	0.7	2	0.7	0.0	0.0%			50	0.7
Streptococcal Disease, Group A, invasive	5	1.9	12	4.5	-7.0	-58.3%			-	-
Streptococcus pneumoniae**	10	3.7	4	1.5	6.0	150.0%			-	-
Syphilis, Total Early (primary, secondary, early latent)	0	0.0	2	0.7	-2.0	-100.0%			104	1.4
Tuberculosis (Mycobacteria)	7	2.6	4	1.5	3.0	75.0%			93	1.3

[±] Data is preliminary.

[†] Rate based on 2002 US Census (267,748 for Rappahannock; 7,293,542 for VA)

* Lyme cases are all suspected cases reported to RAHD, not all cases met CDC surveillance definition.

** Invasive S. pneumonia infection in children < 5 years of age. RAHD is working with CDC and Wythe to report possible vaccine failures.

BOLD = reportable within 24 hours of suspected diagnosis.